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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/982,711	10/18/2001	Taizo Shirai	450100-03547	8666
20999	7590	01/11/2005	EXAMINER	
FROMMER LAWRENCE & HAUG 745 FIFTH AVENUE- 10TH FL. NEW YORK, NY 10151			KHOSHNOODI, NADIA	
			ART UNIT	PAPER NUMBER
			2133	

DATE MAILED: 01/11/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/982,711	SHIRAI ET AL.	
	Examiner	Art Unit	
	Nadia Khoshnoodi	2133	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 October 2001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-32 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on 10/18/2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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PART III Detailed Action

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-32 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As per claim 1, 8, 15, 17, 24, 31 and 32:

These claims recite the limitation "the first sector" and "the M-th sector" in line 3 (for claims 15), line 4 (for claims 1, 8, 17, 24), and line 5 (for claims 31 and 32). Since either of these sectors has not been previously introduced, there is insufficient antecedent basis for this limitation in the claim. It is suggested that applicants replace "the" with "a" and "an" as appropriate.

As per claims 2-7, 9-14, 16, 18-23, and 25-30:

These claims are rejected by virtue of their dependency.

Claim Rejections - 35 USC § 101

I. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

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II. Claims 31 and 32 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter, as they do not fall under any of the statutory classes of inventions. The language in the claims raise an issue because the claims are directed merely to an abstract idea that is not tied to an article of manufacture which would result in a practical application producing a concrete, useful, and tangible result to form the basis of statutory subject matter under 35 U.S.C. 101.

Claim Rejections - 35 USC § 102

III. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

IV. Claims 1-2, 5, 8, 15-18, 21, 24-25, 28, and 31-32 are rejected under 35 U.S.C. 102(b) as being fully anticipated by Hazard, United States Patent No. 6,658,566.

As per claims 1 and 17:

Hazard teaches an information recording device and method for executing processing which stores data to a memory having a data storage area consisting of a plurality of blocks, each of which consists of the first sector to the M-th sector which each have a predetermined data capacity, where M represents a natural number (col. 5, lines 15-39 and fig. 3), said information recording device comprising a cryptosystem unit which selectively uses different encryption keys for the first sector to the M-th sector to execute encryption processing and which executes

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encryption processing on data to be stored in each of the sectors (col. 5, lines 1-14 and fig. 2).

As per claims 2 and 18:

Hazard teaches an information recording device and method, wherein in said cryptosystem unit, from among M different encryption keys corresponding to M sectors, which are stored in header information corresponding to the data to be stored in said memory, one encryption key is selected in accordance with a sector in which the data is stored, and the selected encryption key is used to perform the encryption of data to be stored in each of the sectors (col. 5, lines 35-39 and fig. 3). Although the term "header information" is not specifically used, the information is stored in such a way that it is identical to that of header information.

As per claims 5 and 21:

Hazard teaches an information recording device and method wherein, in said cryptosystem unit, the encryption processing for the first sector to the M-th sector is executed as single-DES encryption processing using different encryption keys for the sectors (col. 4, lines 32-46).

As per claims 8 and 24:

Hazard teaches an information playback device and method for executing processing which reads data from a memory having a data storage area consisting of a plurality of blocks, each of which consists of the first sector to the M-th sector which each have a predetermined data capacity, where M represents a natural number (col. 5, lines 15-39 and fig. 3), said information playback device comprising a cryptosystem unit which selectively uses different decryption keys for the first sector to M-th sector to execute decryption processing and which

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executes decryption processing on data stored in each of the sectors (col. 4, lines 32-46, col. 5, lines 1-14, and fig. 2).

As per claims 9 and 25:

Hazard teaches an information playback device and method, wherein, in said cryptosystem unit, from among M different decryption keys corresponding to M sectors, which are stored in header information corresponding to data stored in said memory, one decryption key is selected in accordance with a sector in which the data is stored, and the selected decryption key is used to perform the decryption of data stored in each of the sectors (col. 4, lines 32-46, col. 5, lines 35-39 and fig. 3). Although the term "header information" is not specifically used, the information is stored in such a way that it is identical to that of header information.

As per claims 12 and 28:

Hazard teaches an information playback device and method wherein, in said cryptosystem unit, the decryption processing for the first sector to the M-th sector is executed as single-DES decryption processing using different decryption keys for the sectors (col. 4, lines 32-46).

As per claim 15:

Hazard teaches an information recording medium having a data storage area consisting of a plurality of blocks, each of which consists of the first sector to the M-th sector which each have a predetermined data capacity, where M represents a natural number (col. 5, lines 15-39 and fig. 3), wherein a plurality of different cryptographic keys which are selectable for the sectors are stored as header information of data stored in said data storage area (col. 5, lines 35-39).

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Although the term “header information” is not specifically used, the information is stored in such a way that it is identical to that of header information.

As per claim 16:

Hazard teaches an information recording medium as applied to claim 15, wherein said plurality of different cryptographic keys are M different encryption keys corresponding to the M sectors (col. 5, lines 1-14 and fig. 2).

As per claim 31:

A program providing medium for providing a computer program which controls a computer system to execute processing which stores data in a memory having a data storage area consisting of a plurality of blocks, each of which consists of the first sector to the M-th sector which each have a predetermined data capacity, where M represents a natural number (col. 5, lines 15-39 and fig. 3), said computer program comprising a data-encrypting step in which encryption processing on data to be stored in the sectors is executed by performing encryption using encryption keys selected for the first sector to the M-th sector (col. 5, lines 1-14 and fig. 2).

As per claim 32:

A program providing medium for providing a computer program which controls a computer system to execute processing which reads data from a memory having a data storage area consisting of a plurality of blocks, each of which consists of the first sector to the M-th sector which each have a predetermined data capacity, where M represents a natural number (col. 5, lines 15-39 and fig. 3), said computer program comprising a data-decrypting step in which decryption of data stored in each of the sectors is performed by executing decryption processing

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using decryption keys selected in accordance with the first sector to the M-th sector (col. 4, lines 32-46, col. 5, lines 1-14, and fig. 2).

Claim Rejections - 35 USC § 103

V. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

VI. Claims 3-4, 6, 10-11, 13, 19-20, 22, 26-27, and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hazard, United States Patent No. 6,658,566 as applied to claims 1, 8, 17, and 24 above, and further in view of Dilkie et al., United States Patent No. 6,341,164.

As per claims 3 and 19:

Hazard substantially teaches an information recording device and method, as applied to claims 1 and 17 above. Not explicitly disclosed is the device/method wherein, in said cryptosystem unit, from among M different encryption keys corresponding to M sectors, which are stored in header information corresponding to the data to be stored in said memory, a set of at least two encryption keys is selected in accordance with a sector in which the data is stored, and the selected encryption keys are used to perform the encryption of data to be stored in each of the sectors. However, Hazard teaches the use of single-DES encryption (col. 4, lines 32-46).

Furthermore, Dilkie et al. teach the use of triple-DES which uses at least 2 keys for encryption. Therefore, it would have been obvious to a person in the art at the time the invention was made to modify the device/method disclosed in Hazard to use triple-DES for the encryption

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processing, thereby using at least 2 keys for encryption. This modification would have been obvious because a person having ordinary skill in the art, at the time the invention was made, would have been motivated to do so since it is suggested by Dilkie et al. in col. 2, lines 48-54.

As per claims 4 and 20:

Hazard substantially teaches an information recording device and method, as applied to claims 1 and 17 above. Not explicitly disclosed is the device/method wherein, in said cryptosystem unit, from among P different encryption keys in which the number P differs from the number M , at least one encryption key is selected in accordance with a sector in which the data is stored, and the selected at least one encryption key is used to perform the encryption of data to be stored in each of the sectors.

However, Dilkie et al. teach that from among P different encryption keys, where P differs from the number M , at least one encryption key is selected from a key package to use for encryption purposes. Therefore, it would have been obvious to a person in the art at the time the invention was made to modify the device/method disclosed in Hazard to choose at least one encryption key for encrypting data to be stored in each of the sectors from P different keys, where the number P differs from the number M . This modification would have been obvious because a person having ordinary skill in the art, at the time the invention was made, would have been motivated to do so since it is suggested by Dilkie et al. in col. 4, lines 1-37 and col. 4, line 51- col. 2, line 6.

As per claims 6 and 22:

Hazard substantially teaches an information recording device and method, as applied to claims 1 and 17 above. Not explicitly disclosed is the information recording device wherein, in

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said cryptosystem unit, the encryption processing for the first sector to the M-th sector is executed as triple-DES encryption processing using at least two different encryption keys for each of the sectors. However, Dilkie et al. teaches the use of a triple-DES encryption processing. Therefore, it would have been obvious to a person in the art at the time the invention was made to modify the device/method disclosed in Hazard to use triple-DES for the encryption processing. This modification would have been obvious because a person having ordinary skill in the art, at the time the invention was made, would have been motivated to do so since it is suggested by Dilkie et al. in col. 2, lines 48-54.

As per claims 10 and 26:

Hazard substantially teaches an information playback device and method, as applied to claims 8 and 24 above. Not explicitly disclosed is the device/method wherein an information playback device and method wherein, in said cryptosystem unit, from among M different decryption keys corresponding to M sectors, which are stored in header information corresponding to data stored in said memory, a set of at least two decryption keys is selected in accordance with a sector in which data is stored, and the selected encryption keys are used to perform the decryption of data stored in each of the sectors. However, Hazard teaches the use of single-DES decryption (col. 4, lines 32-46 and col. 4, lines 32-46). Furthermore, Dilkie et al. teach the use of triple-DES which uses at least 2 keys for decryption. Therefore, it would have been obvious to a person in the art at the time the invention was made to modify the device/method disclosed in Hazard to use triple-DES for the decryption processing, thereby using at least 2 keys for decryption. This modification would have been obvious because a

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person having ordinary skill in the art, at the time the invention was made, would have been motivated to do so since it is suggested by Dilkie et al. in col. 2, lines 48-54.

As per claims 11 and 27:

Hazard substantially teaches an information playback device and method, as applied to claims 1 and 17 above. Not explicitly disclosed is the device/method wherein, in said cryptosystem unit, from among P different decryption keys in which the number P differs from the number M , at least one decryption key is selected in accordance with a sector in which data is stored, and the selected at least one decryption key is used to perform the decryption of data stored in each of the sectors.

However, Dilkie et al. teach that from among P different encryption keys, where P differs from the number M , at least one encryption key is selected from a key package to use for encryption purposes. Therefore, it would have been obvious to a person in the art at the time the invention was made to modify the device/method disclosed in Hazard to choose at least one decryption key based on the encryption keys stored in each of the sectors from P different keys, where the number P differs from the number M . This modification would have been obvious because a person having ordinary skill in the art, at the time the invention was made, would have been motivated to do so since it is suggested by Dilkie et al. in col. 4, lines 1-37, col. 4, line 51-col. 2, line 6, and col. 5, lines 61-67).

As per claims 13 and 29:

Hazard substantially teaches an information playback device and method, as applied to claims 8 and 24 above. Not explicitly disclosed by Hazard is the information playback device wherein, in said cryptosystem unit, the decryption processing for the first sector to the M -th

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sector is executed as triple-DES decryption processing using at least two different decryption keys for each of the sectors. However, Dilkie et al. teaches the use of a triple-DES decryption processing. Therefore, it would have been obvious to a person in the art at the time the invention was made to modify the device/method disclosed in Hazard to use triple-DES for the decryption processing. This modification would have been obvious because a person having ordinary skill in the art, at the time the invention was made, would have been motivated to do so since it is suggested by Dilkie et al. in col. 2, lines 48-54.

VII. Claims 7, 14, 23, and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hazard, United States Patent No. 6,658,566 as applied to claims 1, 8, 17, and 24 above, and further in view of Schneier, *Applied Cryptography*.

As per claims 7 and 23:

Hazard substantially teaches an information recording device and method, as applied to claims 1 and 17 above. Furthermore, Hazard teaches the use of header information used to store the key as encrypted by an encryption algorithm, as well as other relevant information (col. 8, lines 15-39). Not explicitly disclosed by Hazard is the device/method wherein said cryptosystem unit selectively executes one of sector-independent encryption processing in which in accordance with an encryption format type stored in header information corresponding to the data to be stored in said memory, the entirety of the data is encrypted in a single encryption mode, and sector-dependent encryption processing in which in accordance with the encryption format type, the data is encrypted by using encryption keys which are selected for the sectors.

However, Schneier teaches using sector-independent encryption processing where the entirety of data is encrypted in a single encryption mode, and sector-dependent encryption

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processing where the data is encrypted by using encryption keys that are selected for the sectors. Therefore, it would have been obvious to a person in the art at the time the invention was made to modify the device/method disclosed in Hazard to store the encryption format type in the header information to designate a sector-dependent or sector-independent encryption format. This modification would have been obvious because a person having ordinary skill in the art, at the time the invention was made, would have been motivated to do so since it is suggested by Schneier on pages 221, lines 8-12 and 222, lines 24-43.

As per claims 14 and 30:

Hazard substantially teaches an information playback device and method, as applied to claims 8 and 24 above. Furthermore, Hazard teaches the use of header information used to store the key as encrypted by an encryption algorithm, as well as other relevant information (col. 8, lines 15-39). Not explicitly disclosed by Hazard is the device/method wherein said cryptosystem unit selectively executes one of sector-independent decryption processing in which in accordance with an encryption format type stored in header information corresponding to data stored in said memory, the entirety of the data is decrypted in a single decryption mode, and sector-dependent decryption processing in which in accordance with the encryption format type, the data is decrypted by using decryption keys which are selected for the sectors.

However, Schneier teaches using sector-independent decryption processing where the entirety of data is decrypted in a single decryption mode, and sector-dependent decryption processing where the data is decrypted by using decryption keys that are selected for the sectors. Therefore, it would have been obvious to a person in the art at the time the invention was made to modify the device/method disclosed in Hazard to store the encryption format type in the

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header information to designate a sector-dependent or sector-independent decryption format.

This modification would have been obvious because a person having ordinary skill in the art, at the time the invention was made, would have been motivated to do so since it is suggested by Schneier on pages 221, lines 8-12 and 222, lines 24-43.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nadia Khoshnoodi whose telephone number is (571) 272-3825. The examiner can normally be reached on M-F: 8:00-4:30.

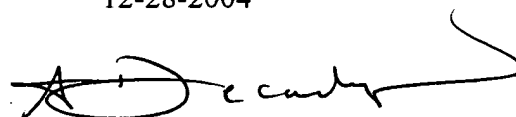
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Albert Decady can be reached on (571) 272-3819. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

NK



Nadia Khoshnoodi
Examiner
Art Unit 2133
12-28-2004



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